

## ABSTRACT OF THE DISCLOSURE

An angle detector 25 sets a q-axis command current to a first magnetic pole detecting current  $I_{q\_p1}$  and a second magnetic pole detecting current  $I_{q\_p2}$ , and performs a magnetic pole detecting process to calculate a first magnetic pole reference value  $A_1$  and a second magnetic pole reference value  $A_2$  ( $t_2 - t_3$ ,  $t_4 - t_5$ ), and detect the orientation of the magnetic poles of a rotor 2 of a motor 1 based on the sign of the difference  $\Delta A$  ( $= A_1 - A_2$ ) between the first magnetic pole reference value  $A_1$  and the second magnetic pole reference value  $A_2$ . The angle detector 25 effects a proportional process only on the difference between the q-axis command current and a detected q-axis current and the difference between a d-axis command current and a detected d-axis current to calculate a current difference ( $t_2 - t_5$ ) under current feedback control when the magnetic pole detecting process is carried out, and effects a proportional plus integral process on the above differences to calculate a current difference ( $t_0 - t_2$ ,  $t_5 -$ ) under current feedback control when the magnetic pole detecting process is not carried out.